REMARKS

All of the original claims have now been cancelled, and new claims 22 - 43 directed to the elected subject matter are being submitted as a part of this paper.

The disparity the examiner point out between the number 864 which appears in Table 1 at the top of page 5 of the specification and the deduced amino acid sequence of 863 amino acid residues that appears as SEQ ID NO:3 was the result of a clerical error and is regretted. SEQ ID NO: 3 (which is deduced from SEQ ID NO 4) is of course correct, and to remove this inconsistency, a substitute Table 1 to be inserted at the top of page 5 of the Specification is provided as a part of this response. Substitution to cure this inadvertent error is respectfully requested.

New claim 22 is patterned after original claim 1 and includes a recitation of at least 90% similar amino acid sequences, which finds response on page 12, line 32 of the specification. The recitation of fragments that exhibit essentially the same biological activity finds response on page 41, line 28 of the specification. Claims 23-26 are patterned after original claims 2-5. Claims 27-31 are patterned after original claims 9-13.

New claim 32 is patterned after original claim 6, but has been limited to alternative splice variants of the nucleotide sequence set forth in SEQ ID NO:4 that encode polypeptides which exhibit prolyl oligopeptidase activity. New claim 33 is also patterned after original claim 6, but has been limited to alternative splice variants of the nucleotide sequence set forth in SEQ ID NO:4 that encode polypeptides which exhibit prolyl oligopeptidase activity and that have a start condon and a stop condon. New claim 34 is directed to the 4 disclosed sequences which meet this criteria and which code for region containing the catalytic residues needed for such protease activity. It is believed that this more specific claim should be allowable. The Examiner's attention is directed to the numerous U.S. patents that have recently issued containing claims to splice variants of protein-encoding nucleotide sequences; see U.S. Patent No. 6,372,877 (claim 1); U.S. Patent No. 6,528,630 (claim 3); U.S. Patent No. 6,117,978 (claim 14); U.S. Patent No. 6,143,950 (claim 2); and U.S. Patent No. 6,040,429 (claim 2).

New claim 35 is patterned after original claim 3, but is limited to the elected species and to fragments which exhibit essentially the same biological activity (as in new claim 22). Claim 3 was not rejected based upon art, and it is believed that claim

35 should be allowable. Dependent claims 36-42 are patterned after original claims 2, 4, 5, and 9 - 12. Claim 43 is a product by process claim dependant upon claim 42. Inasmuch as most of these original claims were not rejected on prior art, and inasmuch as they now depend directly or indirectly from a claim which should be allowable, it is believed that they should also be considered to be in allowable condition.

New claim 32 is limited to 8 of the splice variants that are set forth in the sequence listings, it being felt that the remaining sequence which is prematurely terminated at the C-terminus is too short to be biologically active as a peptidase. Claim 33 recites isolated nucleic acid which contains an alternative splice variant of SEQ ID NO: 4 that contains a region extending between a start codon and a stop codon and that encodes a polypeptide that exhibits a prolyl oligopeptidase activity. The 4 sequences recited in dependent claim 34 meet this definition. It is submitted that applicant should be permitted to claim this subject matter as set forth in claim 33 as it distinguishes from the prior art cited by the examiner and such alternative splice variants will be recognized by one having ordinary skill in this art. Examples of U.S. patents issued with the claims of such scope relating to splice variants are set forth hereinabove.

With respect to the Examiner's rejections based upon inadequate written description and scope of enablement with regard to various of the claims (which have of course been now amended), Applicants submit the comments which follow. First with regard to the written description requirement, the purpose behind the written description requirement is to ensure that the patent applicant had possession of the **claimed** subject matter at the time he filed his application. In re Wertheim, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976). The manner in which the specification meets the requirement is not material; it may be met by either an express or an implicit disclosure. Also, since patents are written to enable those of skill in the art to practice what is claimed, and the specification is presumed to include the knowledge of those of skill in the art, there is no need to explicitly describe all peripheral subject matter.

With respect to the scope of enablement, in order to satisfy the enablement requirement of 35 U.S.C §112, first paragraph, the specification need only t ach one of skill in th art how to make and use the inv ntion without undu xperimentation. Atlas Powder Co. v. E.I. DuPont de Nemours, 750 F.2d 1569, 224 USPQ 409 (Fed.

Cir. 1984). The test of enablement is whether one of skill in the art could make or use the invention from the disclosure in the specification, coupled with the information known to those of skill in the art, without undue experimentation. The enablement requirement may be satisfied even though some experimentation is required. Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986). The law does not require an applicant to describe in the specification every conceivable embodiment of the invention. SRI Int'l. v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121, 227 USPQ 577, 586 (Fed. Cir. 1985).

Because patents are written to enable those skilled in the art to practice the invention, a patent need not describe what is well known in the art (W.L. Gore & Assoc. v. Gorlock, Inc., 721 F.2d 1540, 1556, 220 USPQ 303, 315; see also, In re Wands, 8 USPQ2d 1400 (Fed. Cir. 1988)). The requirements of 35 U.S.C. §112, first paragraph, can be fulfilled by the use of illustrative examples or by broad terminology. In re Anderson, 176 USPQ 331,333 (CCPA 1973):

> ...we do not regard section 112, first paragraph, as requiring a specific example of everything within the scope of a broad claim . . . What the Patent Office is here apparently attempting is to limit all claims to the specific examples, not withstanding the disclosure of a broader invention. This it may not do.

In the decision in the case of In re Angstadt, 537 F.2d 498, 190 USPQ 214, 218 (CCPA 1976), the Court stated:

> [T]he question is, then, whether in an unpredictable art, section 112, requires disclosure of a test with every species covered by a claim. To require such a complete disclosure would apparently necessitate a patent application or applications with "thousands" of examples or the disclosure of "thousands" of catalysts along with information as to whether such exhibits catalytic behavior resulting in the production of hydroperoxides. More importantly, such a requirement would force an inventor seeking adequate patent protection to carry out a prohibitive number of actual experiments. This would tend to discourage inventors from filing patent applications in an unpredictable area since the patent claims would have to be limited to those embodiments which are expressly disclosed. A potential infringer could readily avoid "literal" infringement of such claims by m rely finding another analogous catalyst compl x which could be us d in "forming hydroperoxides"

that would require such is submitted to be improper. As set forth earlier by the CCPA:

> "The public purpose on which the patent law rests requires the granting of claims commensurate in scope with the invention disclosed. This requires as much the granting of broad claims on broad inventions as it does the granting of more specific claims on more specific inventions." In re Sus and Schafer, 49 CCPA 1301, 306 F.2d 494, 134 USPQ 301, at 304 (CCPA 1971).

A similar situation was also considered in the case of In re Fisher, 166 USPQ 18, at 24 (CCPA 1970). In the Fisher decision, the court stated that an inventor who is the first should be allowed to dominate future developments of others, even if they should be independently patentable, so long as they are based in some way upon his teachings--because such improvements would still be within his contribution, i.e. such improvement having been made possible by the work of the first inventor. This decision was quoted with favor and relied upon by the Court in the case of In re Hogan and Banks, 194 U.S.P.Q. 527, at 537 (CCPA 1977), where the Court stated that the decision in the case of In re Fisher "set forth the basic considerations respecting enablement and the potential for domination of future developments . . ." Accordingly, it is believed that claims 22 - 43 should be allowable as adequately described and enabled.

It is submitted that new claims 22-43 are allowable over the disclosure of Lamerdin. The sequences disclosed by Lamerdin to which the examiner called attention were to believed to have been provided by computer analysis of work done on the Human Genome Project. While it is true that these sequences deduced by computer analysis show some homology to Applicants' claimed sequence, they are merely fragments of the mature protein that would not exhibit prolyl oligopeptidase activity. Accordingly, these Lamerdin et al. disclosures would not be anticipatory of the invention now set forth in claims 22-43.

The results of the search by the European Patent Office in the international application (that was contemporaneously filed with the filing of this U.S. application) were forwarded as part of an Information Disclosure Statement on April 10, 2003. In that EPO search report, it was stated that the Curagen published application (WO/00/58473) disclosed a deduced protein sequence (SEQ ID NO: 2780) 720 residues long that has 97.9% identity with Applicants' SEQ ID NO: 3 in the range of the first 643 residues of Applicants' sequence. The Curagen deduced sequence is

residues long that has 97.9% identity with Applicants' SEQ ID NO: 3 in the range of the first 643 residues of Applicants' sequence. The Curagen deduced sequence is merely identified as a novel protein, likely a kinase. This partial protein sequence is missing more than 200 residues at the C-terminus of Applicants' compound referred to as DPRP-2, and it is thus clearly not anticipatory thereof, nor would it be expected to be biologically active as a prolyl oligopeptidase because it has been determined that enzyme activity results from an active site close to the C-terminus.

The EPO search report also called attention to the Incyte Pharmaceutical published international application (WO 00/422/01), and more particularly to SEQ ID NO: 16 which is 518 residues long and which was noted as being homologous with Dipeptidyl peptidase IV. It was stated that this 518-residue deduced protein had 99.3% identity with Applicants' SEQ ID NO: 3 in the range of the first 480 residues. Accordingly, it can be seen that disclosed partial protein is missing some 380 plus residues that are present at the C-terminus of Applicants' claimed compounds; as such, it would also lack prolyl oligopeptidase activity. Thus, it likewise fails to anticipate the subject matter of independent Claim 22 submitted herewith, which recites isolated nucleic acid that includes a polypeptide having an amino acid sequence that is at least 90% similar to that of SEQ ID NO: 3 and exhibits the same biological function.

In view of the foregoing remarks and in the absence of more pertinent prior art, it is believed that new claims 22 to 43 should be allowed, and allowance thereof is respectfully requested.

Respectfully submitted,
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I hereby certify that this paper is being sent via facsimile to 703.872.9306 to the United States Patent and Trademark Office on May 21, 2003.

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Date

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